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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,616	11/24/2003	Gregory Arthur Allen	01173-2025/TAC	1301

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EXAMINER
BONZO, BRYCE P

ART UNIT	PAPER NUMBER
2113	

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 November 2003</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5-11 and 14-26* is/are allowed.

6)☒ Claim(s) *1-4,12,13,27-30 and 33-38* is/are rejected.

7)☒ Claim(s) *31 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>23 November 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Non-Final Official Action

Status of the Claims

Claims 1-4, 12, 13, 27-30, 33-38 are rejected under 35 USC §102.

Claim 13 is rejected under 35 USC §112, second paragraph.

Claim 5-11 and 14-26 are allowed.

Claims 31 and 32 are objected to while containing allowable subject matter.

Rejections under 35 USC §112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. It depends from itself. For purposes of examination it is

deemed to depend from claim 12.

Rejections under 35 USC §102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 12, 13, 27-30, 33-38 are rejected under 35 U.S.C. 102(b) as being

anticipated by Yanai et al. (United States Patent No. 5,742,792).

As per the claims, Yanai discloses:

1. A system for failover comprising:

at least one client selectively connectable to at least one of a primary server and

at least one backup server via a network connection (Figure 4);

said primary server and said at least one backup server being connected to each

other in a normal state during which said primary server processes messages from said

client and maintains a transaction log respective to each said message in random

access memory (column 10, lines 1-13), and during which. said backup server is

operable to maintain a mirror image of said transaction log (column 10, lines 1-13), said

transaction logs being periodically flushed to a non-volatile storage device respective to

each said server (column 11, lines 31 through column 12, lines 21; column 10, lines 1-

13);

said client being only connected to said primary server in a primary-only state

when said backup server is unavailable during which said primary server processes

messages from said client and maintains a transaction log respective to each said

message in random access memory, and during which said primary server transaction

log is flushed to said primary server non-volatile storage device after each said

message is processed (column 32, lines 49-63; column 12, lines 6-21); and,

said client being only connected to said backup server in a backup-only state
when said primary server is unavailable during which said backup server initially
recovers a last-known state of said primary server and then processes messages from
said client and maintains said backup server transaction log respective to each said
message in random access memory, and wherein said transaction log is flushed to said
backup server non-volatile storage device immediately after each said message is
processed (column 32, lines 49-63 and column 12, lines 6-21).

2. A system for failover comprising:

at least one client, a primary server and at least one backup server
interconnected via at least one network connection (Figure 1);

said primary server and said at least one backup server each operable to:

execute an application for processing messages received from said at least one
client (column 7, lines 45-51);

maintain a transaction log in random access memory (column 10, lines 1-13);

execute a replication agent (column 10, lines 13-27);

execute a checkpoint agent for flushing said transaction log to a non-volatile
storage device respective to each said server (column 11, lines 31 though column 12,
lines 21);

said system having:

a normal state during which only said primary server application processes said messages and writes results thereof to said primary server transaction log and during which said replication agents are operable to mirror said primary server transaction log in said backup server transaction log, each of said transaction logs being flushed according to a predefined criteria (column 11, lines 31 through column 12, lines 21);

a primary-only state during which only said primary server application processes said messages and writes results thereof to said primary server transaction log and during which transaction log is simultaneously flushed to said primary server non-volatile storage device (column 32, lines 49-63);

a backup-only state during which only said backup server application processes said messages and writes results thereof to said backup server transaction log and during which backup server transaction log is simultaneously flushed to said backup server non-volatile storage device (column 32, lines 4-63).

3. A system for failover comprising:

at least one client connectable to a primary server coupled to a backup server in a normal state during which said primary server processes messages from said client and maintains a transaction log respective to each said message in random access memory, and during which said backup server is operable to maintain a mirror image of said transaction log, said transaction logs being periodically flushed to a non-volatile

storage device respective to each said server (Figure 4; column 11, lines 31 through column 12, lines 21);

said at least one client only connectable to said primary server when said backup server is unavailable during which said primary server processes messages from said client and maintains a transaction log respective to each said message in random access memory, and during which said backup server transaction log is flushed to said primary server non-volatile storage device after each said message is processed (column 32, lines 49-63; column 12, lines 6-24); and,

said at least one client only connectable to said backup server when said primary server is unavailable during which said backup server initially recovers a last-known state of said primary server and then processes messages from said client and maintains said backup server transaction log respective to each said message in random access memory, and wherein said transaction log is flushed to said backup server non-volatile storage device immediately after each said message is processed (column 32, lines 49-63; column 12, lines 6-24).

4. A system for failover comprising:

at least one client connectable to a primary server coupled to a backup server when both of said servers are available and during which said primary server processes messages from said client and maintains a transaction log respective to each said message in random access memory, and during which said backup server is operable to maintain a mirror image of said transaction log, said transaction logs being

periodically flushed to a non-volatile storage device respective to each said server

(column 32, lines 49-63; column 12, lines 6-24);

said at least one client being connectable to an available one of said primary

server and said backup server when one of said servers is unavailable, during which

said available server processes messages from said client and maintains a transaction

log respective to each said message in random access memory, and during which said

available server transaction log is flushed to said non-volatile storage device respective

thereto after each said message is processed (column 32, lines 49-63; column 12, lines

6-24).

12. The system according to claim 1 wherein said primary server and said backup

server are implemented on two substantially identical computing environments (Figure

4).

13. The system according to claim 13 comprising at least one additional backup server

(column 9, lines 20-24).

27. A method for operating a system for failover comprising the steps of:

receiving, at a primary server, a request from a client (Figure 7, item 401);

processing, at said primary server, said request as at least one transaction

(Figure 8, item 414);

saving, in volatile memory of said primary server, a transaction record respective

to said at least one transaction (Figure 8, item 414);

generating, at said primary server, a request to commit said transaction (Figure

8, item 418);

mirroring said transaction record in volatile memory of said backup server (Figure

8, item 419); and,

acknowledging, in said primary server, said commit request if said mirroring is

successfully confirmed (Figure 8, item 419).

28. The method of claim 27 further comprising the steps of: periodically flushing said

primary server volatile memory to a non-volatile memory respective to said primary

server (column 11, lines 31 through column 12, line 21 and column 10, lines 1-13).

29. The method of claim 27 further comprising the steps of: periodically flushing said

backup server volatile memory to a non-volatile memory respective to said backup

server (column 11, lines 31 through column 12, line 21 and column 10, lines 1-13).

30. The method of claim 27 further comprising the additional steps of repeating the

foregoing steps for additional received messages (inherent to the operation of buffers

and caches).

33. A method of operating a backup server in a system for failover comprising the steps of:

when said backup server determines a primary server connected thereto is available, performing the steps of:

mirroring transaction records generated by said primary server in volatile memory of said backup server (column 10, lines 1-13 and column 11, lines 31- column 12, lines 21); and,

periodically flushing said volatile memory to non-volatile memory connected to said backup server (column 10, lines 1-13 and column 11, lines 31- column 12, lines 21;

when said backup server determines said primary server is unavailable (column 32, lines 49-63 and column 12, lines 6-24),

performing the steps of: receiving a request from a client (column 10, lines 1-13 and column 11, lines 31- column 12, lines 21);

processing said request as at least one transaction (column 10, lines 1-13 and column 11, lines 31- column 12, lines 21;

saving in volatile memory a transaction record respective to said at least one transaction (column 10, lines 1-13 and column 11, lines 31- column 12, lines 21; and,

flushing said at least one transaction record to non-volatile memory (column 10, lines 1-13 and column 11, lines 31- column 12, lines 21).

34. The method of claim 33 further comprising the steps of, when said backup server initially determines said primary server is no longer available;

flushing said backup server volatile memory to non-volatile memory (column 32, lines 49-63 and column 12, line 6-24);

applying any outstanding transactions to at least a table and a queue associated with said transaction records stored on said non-volatile memory (column 32, lines 49-63 and column 12, line 6-24); and,

sending a signal to said clients indicating said backup server is ready to process requests (column 32, lines 49-63 and column 12, line 6-24).

Claims 35 and 36 are the means plus function back up embodiments of claims 33 and 34 and are rejected accordingly.

Claims 37 and 38 are the means plus function primary embodiments of claims 33 and 34 and are rejected accordingly.

Allowable Subject Matter
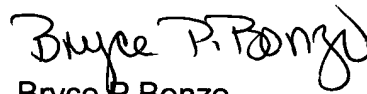
Claims 5-11, 14-26 are allowed.

Claims 31 and 32 are objected as containing the following allowable subjected matter as they contain a unique combination of known steps. As such any amendment to the these claims may eliminate the unique assembly and present a rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryce P. Bonzo whose telephone number is (571)272-3655. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571)272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bryce P Bonzo
Primary Examiner
Art Unit 2113